UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,018	10/20/2003	Maarten Menzo Wentink	050337-1290 (05CXT0069WL)	4108

20306 7590 11/10/2009

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER	
TAYLOR, NICHOLAS R	
ART UNIT	PAPER NUMBER
2441	
MAIL DATE	DELIVERY MODE
11/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/689,018	WENTINK, MAARTEN MENZO	
	Examiner	Art Unit	
	Nicholas Taylor	2441	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,17,18,21-23 and 25-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,17,18,21-23 and 25-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-14, 17, 18, 21-23 and 25-27 have been presented for examination and are rejected.

Claim Objections

2. Claim 18 is objected to because of the following informality: a period midway through the claim and a semicolon at the end of the claim. Appropriate correction is required.

Response to Arguments

3. Applicant's arguments filed June 25th, 2009, have been fully considered but they are deemed not persuasive.

4. In the remarks, applicant argued in substance that:

(A) The prior art of Li does not teach determining a first backoff interval by measuring an average wait time that one of said stations incurred during previous access attempts. Instead, Li only teaches determining a backoff window based on operational characteristics of the network which are limited to collision rate and number of users. Additionally, Li fails to disclose preventing only one unique station from contending from access to the resource for an interval substantially equal to the first backoff interval, instead applying a backoff interval that is applied indiscriminately to all

stations. Li further fails to teach the limitations of dependent claims 4-6, 13, and 22 for similar reasons to the above.

As to point (A), Li teaches determining a first backoff interval by measuring an average wait time that one of said plurality of stations incurred during previous access attempts to the shared resource (Li, see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064, where the backoff interval is determined by measuring an average wait time from previous access attempts). Li determines a backoff rate that is dynamically adjusted to improve network throughput (paragraph 0014). The backoff value is adjusted based on incurred average wait time that the stations incur during previous access attempts (paragraphs 0014, 0016, 0059-0064). Li teaches measuring an average wait time through network characteristics including, inter alia, collision rate that is determinative of network throughput. A broadest reasonable interpretation of the claim term "average wait time" would include a measurement of network throughput, as the successful transmission ratio of the network would determine the amount of time that a station would have to wait for successful access. Applicant appears to argue that the claimed term "average wait time" is more specific, thereby excluding calculations that take into account collision counts and other network characteristics in determining the wait time incurred. While the claims are interpreted in light of the specification, such limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As to the argument that Li fails to disclose preventing the one station from contending from access to the resource for an interval substantially equal to the first backoff interval, Li teaches preventing the one station from contending for access to said shared resource for an interval substantially equal to the first backoff interval (Li, see paragraphs 0065-0067, and fig. 6, where the station is prevented from contending for access until an interval equal to the first backoff interval has passed). Applicant argues that the claim language requires that the time-based backoff period must be uniquely determined for the one station, and therefore, cannot be applied across multiple stations in the network. The examiner respectfully disagrees, as the claim language merely states, "preventing the one station from contending for access to said shared resource for an interval substantially equal to the first backoff interval." No limitations with respect to the backoff intervals received by additional stations are present in the claim language.

(B) The prior art of Singh does not provide a disclosure, teaching, or suggestion that would lead one of ordinary skill in the art to modify the Li reference using the Singh reference.

As to point (B), it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Li and Singh because doing so would allow the use of a power-saving mode that is beneficial for conserving battery power in mobile stations (see Singh, section 2.1 discussing the importance and need for

power conservation in devices when transmission cycles are not taking place; see also Conclusion section). Singh therefore gives a specific teaching that would motivate one of ordinary skill in the art to make the instant combination. However, a specific suggestion or teaching is not required to support a finding of obviousness in a combination of prior art. See *Ex Parte Smith*, --USPQ2d--, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (citing *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d at 1396 (2007)). One of ordinary skill in the art looking to create a station with the commonly understood benefit of an extended battery life would look to prior art teachings that facilitate intelligent power conservation. Singh, which discloses a shared resource communication system, provides one such predictable solution in the form of an intelligent component power-down when communication is not necessary or not possible. Combination of the two systems would combine known features in a predictable way to yield predictable results.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4-6, 13, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (U.S. PGPub 2002/0163929).

7. As per claims 1, 13, and 22, Li teaches a method for accessing a shared resource comprising:

sharing a resource between a plurality of stations; (Li, see architecture and shared medium of paragraphs 0032, 0033 and fig. 1)

determining a first backoff interval by measuring an average wait time that one of said plurality of stations incurred during previous access attempts to the shared resource; and (Li, see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064, where the backoff interval is determined by measuring an average wait time from previous access attempts)

once it is determined that the one of said plurality of stations desires access to the shared resource and the shared resource first becomes available, preventing the one station from contending for access to said shared resource for an interval substantially equal to the first backoff interval (Li, see paragraphs 0065-0067, and fig. 6, where the station is prevented from contending for access until an interval equal to the first backoff interval has passed).

8. As per claim 2, Li teaches the system further comprising transmitting a frame from the one of said plurality of stations to another station using said shared resource after said first backoff interval has passed, wherein said shared resource is a shared-

communications channel (Li, see architecture and shared medium of paragraphs 0032, 0033 and fig. 1, where frames are transmitted after intervals have passed).

9. As per claim 4, Li teaches the system further wherein said backoff interval is further based on at least one of: i) a moving average; and ii) a contention window value (Li, see paragraphs 0059 and 0060).

10. As per claims 5, Li teaches the system further wherein the station is prevented from contending for access to the shared resource for a second random backoff period beyond said first determined backoff period (Li, see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064).

11. As per claim 6, Li teaches the system further wherein said second random backoff period can assume a nonzero value only after an unsuccessful attempt to transmit occurs (Li, see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 3, 7-12, 14, 17, 18, 21, 23, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (U.S. PGPub 2002/0163929) and Singh et al. ("PAMAS – Power Aware Multi-Access Protocol with Signaling for Ad Hoc Networks").

14. As per claims 3, 14, and 23, Li teaches the above, yet fails to teach the system further comprising, after the first backoff period is determined, powering down a receiver circuit in the one of said plurality of stations for at least a portion of said first backoff interval while the one station is being prevented from contending for access to the shared resource.

Singh teaches a wireless resource sharing system (Singh, sections 1 and 2) that powers down a resource sharing station during intervals in which the station cannot access the resource (see section 2.1 describing IEEE 802.11 nodes that power down when prevented from accessing the resource). Singh additionally teaches the use of the 802.11 protocol specification (section 2.1).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Li and Singh to provide the power saving of Singh in the system of Li, because doing so would allow the use of a power-saving mode that is beneficial for conserving battery power in mobile stations (see Singh, section 2.1 discussing the importance and need for power conservation in devices when transmission cycles are not taking place; see also Conclusion section). Further, one of ordinary skill in the art looking to create a station with the commonly understood benefit

of an extended battery life would look to prior art teachings that facilitate intelligent power conservation. Singh, which discloses a shared resource communication system, provides one such predictable solution in the form of an intelligent component power-down when communication is not necessary or not possible.

15. As per claim 7, Li teaches the above, including constraining the backoff to an interframe space (Li, see, e.g., paragraphs 0059-0063), yet fails to teach the system further wherein said backoff interval is constrained to be at least as long as an IEEE 802.11 distributed interframe space.

Singh teaches a wireless resource sharing system (Singh, sections 1 and 2) that powers down a resource sharing station during intervals in which the station cannot access the resource (see section 2.1 describing IEEE 802.11 nodes that power down when prevented from accessing the resource). Singh additionally teaches the use of the 802.11 protocol specification (section 2.1).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Li and Singh to provide the power saving of Singh in the system of Li, because doing so would allow the use of a power-saving mode that is beneficial for conserving battery power in mobile stations (see Singh, section 2.1 discussing the importance and need for power conservation in devices when transmission cycles are not taking place; see also Conclusion section). Further, one of ordinary skill in the art looking to create a station with the commonly understood benefit of an extended battery life would look to prior art teachings that facilitate intelligent

power conservation. Singh, which discloses a shared resource communication system, provides one such predictable solution in the form of an intelligent component power-down when communication is not necessary or not possible.

16. As per claims 8 and 18, Li teaches a system comprising:

a station and an access point communicating over a shared resource, (Li, see architecture and shared medium of paragraphs 0032, 0033 and fig. 1)

said access point configured to:

determine a first backoff interval value by measuring an average wait time that the access point incurred during previous attempts to access the shared resource; and distribute the first backoff interval value to one or more stations (Li, see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064, where the backoff interval is determined by measuring an average wait time from previous access attempts);

said station configured to:

transmit data over said shared resource; receive the first backoff interval value from said access point; once it is determined that the station desires access to the shared resource and the shared resource first becomes available, to refrain from contending for access to said shared resource for a first interval substantially equal to said first backoff interval value; and (Li, see paragraphs 0065-0067, and fig. 6, where the station is prevented from contending for access until an interval equal to the first backoff interval has passed)

power down a receiver circuit for at least a portion of said first interval while the station is being prevented from accessing the shared resource.

However, Li fails to teach wherein the system powers down a receiver circuit for at least a portion of said first interval while the station is being prevented from access the shared resource.

Singh teaches a wireless resource sharing system (Singh, sections 1 and 2) that powers down a resource sharing station during intervals in which the station cannot access the resource (see section 2.1 describing IEEE 802.11 nodes that power down when prevented from accessing the resource). Singh additionally teaches the use of the 802.11 protocol specification (section 2.1).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Li and Singh to provide the power saving of Singh in the system of Li, because doing so would allow the use of a power-saving mode that is beneficial for conserving battery power in mobile stations (see Singh, section 2.1 discussing the importance and need for power conservation in devices when transmission cycles are not taking place; see also Conclusion section). Further, one of ordinary skill in the art looking to create a station with the commonly understood benefit of an extended battery life would look to prior art teachings that facilitate intelligent power conservation. Singh, which discloses a shared resource communication system, provides one such predictable solution in the form of an intelligent component power-down when communication is not necessary or not possible.

17. As per claims 26 and 27, Li-Singh teaches the system further comprising powering down the transmitter in the one of said plurality of stations for at least the same portion of the first backoff interval (Singh, see section 2.1 describing IEEE 802.11 nodes that power down when prevented from accessing the resource).

18. As per claim 9, Li-Singh teaches the system further comprising transmitting a frame from the one of said plurality of stations to another station using said shared resource after said first backoff interval has passed, wherein said shared resource is a shared-communications channel (Li, see architecture and shared medium of paragraphs 0032, 0033 and fig. 1, where frames are transmitted after intervals have passed).

19. As per claim 10, Li-Singh teaches the system further wherein said first backoff interval is further based on at least one of: i) a moving average; and ii) a contention window value (Li, see paragraphs 0059 and 0060).

20. As per claims 11 and 21, Li-Singh teaches the system further wherein the station is prevented from contending for access to the shared resource for a second random backoff period beyond said first backoff period (Li, see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064).

21. As per claim 12, Li-Singh teaches the system further wherein said second random backoff period can assume a nonzero value only after an unsuccessful attempt to transmit occurs (Li, see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064).

22. As per claims 17, and 25, Li teaches the above, yet fails to teach the system further wherein said shared resource is a shared-communications channel and wherein said transmitter communicates over said shared-communications channel in accordance with an IEEE 802.11 protocol.

Singh teaches a wireless resource sharing system (Singh, sections 1 and 2) that powers down a resource sharing station during intervals in which the station cannot access the resource (see section 2.1 describing IEEE 802.11 nodes that power down when prevented from accessing the resource). Singh additionally teaches the use of the 802.11 protocol specification (section 2.1).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Li and Singh to provide the power saving of Singh in the system of Li, because doing so would allow the use of a power-saving mode that is beneficial for conserving battery power in mobile stations (see Singh, section 2.1 discussing the importance and need for power conservation in devices when transmission cycles are not taking place; see also Conclusion section). Further, one of ordinary skill in the art looking to create a station with the commonly understood benefit of an extended battery life would look to prior art teachings that facilitate intelligent

power conservation. Singh, which discloses a shared resource communication system, provides one such predictable solution in the form of an intelligent component power-down when communication is not necessary or not possible.

Conclusion

23. Applicant's amendment necessitated any new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas Taylor whose telephone number is (571) 272-3889. The examiner can normally be reached on Monday-Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/NT/
Nicholas Taylor
Examiner
Art Unit 2441
/Larry Donaghue/
Primary Examiner, Art Unit 2454